



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Daniel J. Smith and Martin A. Taubman

Application No.: 09/290,049 Group: 1643

Filed: April 12, 1999

For: SYNTHETIC PEPTIDE VACCINES FOR DENTAL CARIES

*Receipt Box SEQ*  
W/D  
#5/Rand4  
08-10-99

## CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.

on June 14, 1999 Marlene R. Fitch  
Date Signature  
Marlene R. Fitch

Typed or printed name of person signing certificate

RECEIVED

JUN 18 1999

TECH CENTER 1600/2900

Box Sequence  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Although a Notice to Comply with Sequence Rules 37 C.F.R. §§1.821-1.825 has not been received in our offices, transmitted herewith is a copy of the "Sequence Listing" (sheets 1/5 through 5/5) in paper form for the above-identified patent application as required by 37 C.F.R. §1.821(c) and a copy of the "Sequence Listing" in computer readable form as required by 37 C.F.R. §1.821(e). As required by 37 C.F.R. §1.821(f), Applicants' Attorney hereby states that the content of the "Sequence Listing" in paper form and the computer readable form of the "Sequence Listing" are the same and, as required by 37 C.F.R. §1.821(g), also states that the submission includes no new matter.

Applicants' Attorney submits the following amendments to comply with 37 C.F.R. §1.821:

In the Specification

On page 22, please replace Table 1 as filed with the attached Substitute Table 1. The table has been amended to add sequence identification numbers only. No new matter has been added.

Please insert the attached "Sequence Listing" (sheets 1/5 through 5/5) comprising SEQ ID NOS: 1-19, into the above-referenced application.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Lisa M. Treannie  
Lisa M. Treannie  
Registration No. 41,368  
Telephone (781) 861-6240  
Facsimile (781) 861-9540

Lexington, Massachusetts 02421-4799  
Date: June 14, 1999

SUBSTITUTE Table 1. Amino acid sequence homology of MAC, EAW and HDS peptides with *S. mutans*, *S. sobrinus* and *S. downei* GTFs and association with  $\beta$ 5 and  $\beta$ 7 strand domains

GTF/peptide (reference)		Sequence	Homology with Peptide
MAC peptide		PQWNGESEKPYDDHL (SEQ ID NO. 4)	
GTF-B	<i>S. mutans</i> <sup>1</sup>	342-SAWNNSDSERPFDDHL (SEQ ID NO. 5)	53%
GTF-C	<i>S. mutans</i> <sup>2</sup>	368-SAWNNSDSEKPFDDHL (SEQ ID NO. 6)	67%
GTF-D	<i>S. mutans</i> <sup>3</sup>	354-PNWNSQTESDTSAGE (SEQ ID NO. 7)	27%
GTF-I	<i>S. downei</i> <sup>1</sup>	342-PQWNGESEKPYDDHL (SEQ ID NO. 8)	100%
GTF-S	<i>S. downei</i> <sup>4</sup>	---	0%
GTF2	<i>S. sobrinus</i> <sup>5</sup>	336-PQWNGESEKPYDDHL (SEQ ID NO. 9)	100%
		† #	
EAW peptide		ANDHLSILEAWSNDNTPYLHD (SEQ ID NO. 1)	
GTF-B	<i>S. mutans</i>	480-ANDHLSILEAWSNDNTPYLHD (SEQ ID NO. 1)	100%
GTF-C	<i>S. mutans</i>	506-ANDHLSILEAWSYNDNTPYLHD (SEQ ID NO. 10)	95%
GTF-D	<i>S. mutans</i>	494-AINHLSILEAWSNDNPQYNKD (SEQ ID NO. 11)	68%
GTF-I	<i>S. downei</i>	482-ANNHVSIVEAWSNDNTPYLHD (SEQ ID NO. 12)	90%
GTF-S	<i>S. downei</i>	467-AIDHLSILEAWSGNDNDYVKQ (SEQ ID NO. 13)	63%
GTF2	<i>S. sobrinus</i>	476-ANNHVSIVEAWSNDNTPYLHD (SEQ ID NO. 14)	84%
		.. $\beta$ 5.	
		†† □	
HDS peptide		VPSYSFIRAHDSEVQDLIA (SEQ ID NO. 2)	
GTF-B	<i>S. mutans</i>	549-VPSYSFIRAHDSEVQDLIA (SEQ ID NO. 2)	100%
GTF-C	<i>S. mutans</i>	575-VPSYSFIRAHDSEVQDLIRNII (SEQ ID NO. 15)	95%
GTF-D	<i>S. mutans</i>	571-MANYIFIRAHDSEVQTVIAKII (SEQ ID NO. 16)	63%
GTF-I	<i>S. downei</i>	551-VPSYSFARAHDSEVQDLIRDII (SEQ ID NO. 17)	84%
GTF-S	<i>S. downei</i>	534-VPNYVFIRAHDSEVQTRIAKII (SEQ ID NO. 18)	74%
GTF-2	<i>S. sobrinus</i>	545-VPSYSFARAHDSEVQDIIRDII (SEQ ID NO. 19)	84%
		. $\beta$ 7.	



*Receipt*

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:

Daniel J. Smith and Martin A. Taubman

Application No.:

09/290,049

Group: 1643

Filed:

April 12, 1999

For:

SYNTHETIC PEPTIDE VACCINES FOR DENTAL CARIES

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231

on 6/14/99

*Marlene R. Fitch*

Date

Signature

Marlene R. Fitch

Typed or printed name of person signing certificate

**RECEIVED**

JUL 6 1999

TECH CENTER 1600/2000

REQUEST FOR CORRECTED FILING RECEIPT

Customer Correction Branch

Application Processing Division

Assistant Commissioner for Patents

Washington, D.C. 20231

Sir:

In view of the concurrently filed Declaration/Power of Attorney, we hereby request that the following items of information be corrected in the Filing Receipt for the subject application received in this office on May 6, 1999.

1. Please correct the Attorney docket number to read FDC98-01P2A.
2. Please add Martin A. Taubman as an inventor and add both inventors' addresses.

Inventorship should read: "DANIEL J. SMITH, NATICK, MA; AND  
MARTIN A. TAUBMAN, NEWTONVILLE, MA".

Enclosed is a copy of the Filing Receipt with changes noted in red. Please make the changes as noted above, and issue a Corrected Filing Receipt.

09/290,049

-2-

Since the errors were made by the U.S. Patent and Trademark Office and not by Applicants or Applicants' Attorney, it is understood that there are no additional fees for the requested corrected Filing Receipt.

Respectfully submitted,

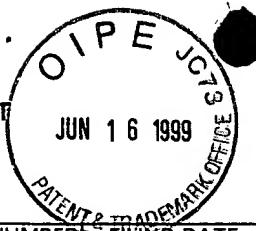
HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Lisa M. Treannie  
Lisa M. Treannie  
Registration No.: 41,368  
Telephone: (781) 861-6240  
Facsimile: (781) 861-9540

Lexington, MA 02421-4799

Date: June 14, 1999

FILING RECEIPT



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
ASSISTANT SECRETARY AND COMMISSIONER  
OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NUMBER	FILING DATE	GRP ART UNIT	FIL FEE REC'D	ATTORNEY DOCKET NO.	DRWGS	TOT CL	IND CL
09/290,049	04/12/99	1643	\$0.00	FDC98-01PZA	2	19	7

HAMILTON BROOK SMITH & REYNOLDS  
RICHARD W WAGNER  
TWO MILITIA DRIVE  
LEXINGTON MA 02421-4799

FDC 98-01P2A

Receipt is acknowledged of this nonprovisional Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please write to the Application Processing Division's Customer Correction Branch within 10 days of receipt. Please provide a copy of the Filing Receipt with the changes noted thereon.

## Applicant(s)

DANIEL J. SMITH

, NATICK, MA ; MARTINA. TAUBMAN,  
NEWTONVILLE, MA

## CONTINUING DATA AS CLAIMED BY APPLICANT-

PROVISIONAL APPLICATION NO. 60/081,550 04/13/98

PROVISIONAL APPLICATION NO. 60/115,142 01/08/99

## TITLE

SYNTHETIC PEPTIDE VACCINES FOR DENTAL CARIES

PRELIMINARY CLASS: 424

DATA ENTRY BY: SCOTT, JOSEPH

TEAM: 02 DATE: 04/29/99



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Daniel J. Smith and Martin A. Taubman

Application No. 09/290,049 Group: 1643

Filed: April 12, 1999

For: SYNTHETIC PEPTIDE VACCINES FOR DENTAL CARIES

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on 6/14/99 Marlene R. Fitch  
Date Signature

Marlene R. Fitch

Typed or printed name of person signing certificate

REPLY TO NOTICE TO FILE MISSING PARTS OF APPLICATION

Box Missing Parts  
Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

In reply to the Notice to File Missing Parts dated April 30, 1999, the following documents and fees are being submitted for filing in the captioned application:

- [X] **EXECUTED DECLARATION/POWER OF ATTORNEY** - A copy of the Notice is attached.  
*(Separate transmittal letter and postcard not required)*
- [X] **FILING FEE** - with Fee Transmittal for Patent Applications in duplicate.  
*(Separate transmittal letter and postcard not required)*
- [X] **SURCHARGE** - surcharge fee of \$130.00.  
*(Separate transmittal letter and postcard not required)*
- [X] **SEQUENCE LISTING** - Filed concurrently and is attached.  
*(Separate transmittal letter and postcard required)*
- [ ] **PETITION FOR EXTENSION OF TIME**

- [ ] Applicant hereby petitions to extend the time to respond to the Notice to File Missing Parts dated [ ] for [ ] month(s) from [ ] to [ ]. The appropriate fee of \$[ ] is included in the enclosed check.
- [ ] A [ ] month extension of time to respond to the Notice to File Missing Parts dated [ ] was filed on [ ] with payment of a \$[ ] fee.
- [ ] Applicant hereby petitions for an additional [ ] month extension of time to respond to the Notice to File Missing Parts. The appropriate fee of \$[ ] is included in the enclosed check.

*(Separate Petition for Extension of Time and postcard not required)*

- REQUEST FOR CORRECTED FILING RECEIPT** - Filed concurrently and is attached.

*(Separate transmittal letter and postcard required)*

- VERIFIED STATEMENT CLAIMING SMALL ENTITY STATUS**

- [ ] Was filed on [ ].

- [ ] Is enclosed herewith.

*(Separate transmittal letter and postcard not required)*

- [ ] In view of the small entity status of the captioned application, we hereby request a reimbursement of 50% of the filing fees in the amount of \$[ ] which were paid on [ ] to be deposited in Deposit Account No. 08-0380.

The fees required for filing the indicated documents are enclosed in the form of a check in the total amount of \$1,202.00. Authorization is hereby granted to charge any additional fees due to Deposit Account No. 08-0380. A copy of this letter is enclosed for accounting purposes.

Respectfully submitted,

HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

By Lisa M. Treannie  
Lisa M. Treannie  
Registration No.: 41,368  
Tel.: (781) 861-6240  
Fax: (781) 861-9540

Lexington, Massachusetts 02421-4799  
Date: June 14, 1999

**HAMILTON, BROOK, SMITH & REYNOLDS, P.C.**

JUN

6 1999

Attorney Docket Number

FDC98-01p2A

Application Number

09/290,049

First Named Inventor

Daniel J. Smith

**CLAIM CALCULATION (includes any preliminary amendment)**

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c) or (j))	19 - 20 =	0	x \$ 18 =	\$ 0
	INDEPENDENT CLAIMS (37 CFR 1.16(b) or (i))	7 - 3 =	4	x \$ 78 =	\$ 312
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			+ \$ 260 =	\$
				BASIC FEE (37 CFR 1.16(a) or (h))	\$ 760
			Total of above Calculations =		\$ 1,072
			Reduction by 50% for filing by small entity (37 CFR 1.9, 1.27, 1.28) =		\$
			TOTAL =		\$ 1072
			Surcharge - Late Filing of Declaration or Filing Fees (37 C.F.R. 1.16(e)) =		\$ 130
			Petition for Extension of Time Fee (37 C.F.R. 1.17) =		\$
			Assignment Recordation Fee = (only when filed with application)		\$
	* Reissue claims in excess of 20 and over original patent. ** Reissue independent claims over original patent			TOTAL =	\$ 1202

1. Small entity status:

- a.  A small entity statement is enclosed.
- b.  A small entity statement was filed in the prior non-provisional application and such status is still proper and desired.
- c.  Is no longer claimed.

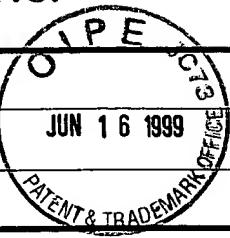
2.  A general authorization is hereby granted to charge deposit account number 08-0380 for any fees required under 37 CFR 1.16 and 1.17 in order to maintain pendency of this application. A copy of this authorization is enclosed for accounting purposes.

3.  A check is enclosed for \$ 1,202.00.  Please charge \$ \_\_\_\_\_ to Deposit Account No. 08-0380.

4.  Other: .....

Signature	Lisa M. Treannie	Date	June 14, 1999
Submitted by Typed or Printed Name	Lisa M. Treannie	Reg. Number	41,368

# HAMILTON, BROOK, SMITH & REYNOLDS, P.C.



<b>FEE TRANSMITTAL FOR PATENT APPLICATIONS</b>	Attorney Docket Number	FDC98-01p2A
	Application Number	09/290,049
	First Named Inventor	Daniel J. Smith

## CLAIM CALCULATION (includes any preliminary amendment)

CLAIMS	(1) FOR	(2) NUMBER FILED	(3) NUMBER EXTRA	(4) RATE	(5) CALCULATIONS
	TOTAL CLAIMS (37 CFR 1.16(c) or (j))	19 - 20 =	0	x \$ 18 =	\$ 0
	INDEPENDENT CLAIMS (37 CFR 1.16(b) or (l))	7 - 3 =	4	x \$ 78 =	\$ 312
	MULTIPLE DEPENDENT CLAIMS (if applicable) (37 CFR 1.16(d))			+ \$ 260 =	\$
				BASIC FEE (37 CFR 1.16(a) or (h))	\$ 760
			Total of above Calculations =		\$ 1,072
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				TOTAL =	\$ 1072
			Surcharge - Late Filing of Declaration or Filing Fees (37 C.F.R. 1:16(e)) =		\$ 130
			Petition for Extension of Time Fee (37 C.F.R. 1.17) =		\$
			Assignment Recordation Fee = (only when filed with application)		\$
	* Reissue claims in excess of 20 and over original patent. ** Reissue independent claims over original patent			TOTAL =	\$ 1202

1. Small entity status:

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b.  A small entity statement was filed in the prior non-provisional application and such status is still proper and desired.

c.  Is no longer claimed.

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3.  A check is enclosed for \$ 1,202.00.  Please charge \$ \_\_\_\_\_ to Deposit Account No. 08-0380.

4.  Other: .....

Signature	Lisa M. Treannie	Date	June 14, 1999
Submitted by Typed or Printed Name	Lisa M. Treannie	Reg. Number	41,368

JUN-16 1999  
U.S. PATENT & TRADEMARK OFFICE



UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

#3

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO./TITLE
--------------------	---------------------	-----------------------	---------------------------

09/290,049 04/12/99 SMITH

D FDC98-01PZA

0232/0430

HAMILTON BROOK SMITH & REYNOLDS  
RICHARD W WAGNER  
TWO MILITIA DRIVE  
LEXINGTON MA 02421-4799

SKR

NOT ASSIGNED

1643

DATE MAILED:

04/30/99

**NOTICE TO FILE MISSING PARTS OF APPLICATION**  
*Filing Date Granted*

An Application Number and Filing Date have been assigned to this application. The items indicated below, however, are missing. Applicant is given TWO MONTHS FROM THE DATE OF THIS NOTICE within which to file all required items and pay fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a). If any of items 1 or 3 through 5 are indicated as missing, the SURCHARGE set forth in 37 CFR 1.16(e) of  \$65.00 for a small entity in compliance with 37 CFR 1.27, or  \$130.00 for a non-small entity, must also be timely submitted in reply to this NOTICE to avoid abandonment.

If all required items on this form are filed within the period set above, the total amount owed by applicant as a small entity (statement filed)  non-small entity is \$ 120.00.

1. The statutory basic filing fee is:

- missing.
- insufficient.

Applicant must submit \$ 760.00 to complete the basic filing fee and/or file a small entity statement claiming such status (37 CFR 1.27).

2. Additional claim fees of \$ 312.00, including any multiple dependent claim fees, are required.

\$ 312.00 for 4 independent claims over 3.

\$            for            dependent claims over 20.

\$            for multiple dependent claim surcharge.

Applicant must either submit the additional claim fees or cancel additional claims for which fees are due.

3. The oath or declaration:

- is missing or unexecuted.
- does not cover the newly submitted items.
- does not identify the application to which it applies.
- does not include the city and state or foreign country of applicant's residence.

An oath or declaration in compliance with 37 CFR 1.63, including residence information and identifying the application by the above Application Number and Filing Date is required.

4. The signature(s) to the oath or declaration is/are by a person other than inventor or person qualified under 37 CFR 1.42, 1.43 or 1.47.

A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.

5. The signature of the following joint inventor(s) is missing from the oath or declaration:

An oath or declaration in compliance with 37 CFR 1.63 listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.

6. A \$50.00 processing fee is required since your check was returned without payment (37 CFR 1.21(m)).

7. Your filing receipt was mailed in error because your check was returned without payment.

8. The application does not comply with the Sequence Rules.

See attached "Notice to Comply with Sequence Rules 37 CFR 1.821-1.825."

9. OTHER:

Direct the reply and any questions about this notice to "Attention: Box Missing Parts."

*J. Scott*  
**A copy of this notice MUST be returned with the reply.**

Customer Service Center  
Initial Patent Examination Division (703) 308-1202

**PART 2 - COPY TO BE RETURNED WITH RESPONSE**

06/18/1999 SJ:JONG 000000084-09290049  
6 FC:101 760.00  
02 FC:105 130.00  
03 FC:102 312.00